

**Remarks**

By the foregoing amendment claim 1 and claim 8 have been amended to specify the apparatus consists essentially of a sensor means, drive means or driver, respectively, and control means connected in series and wherein the control means adjusts the reciprocating movement of the piston without determining the location of the piston. Claim 2 has been cancelled. The amendment of claim 1 and claim 8 is supported by the original claims and page 3, lines 19-24 and the Figure in the application.

Reconsideration of the rejections of record in view of the amended claims is respectfully requested.

Claim 1-8 have been rejected under 35 U.S.C. §103(a) as being unpatentable over BR 9901136 to Yang. Before discussing the differences and deficiencies of this reference a brief review of the independent claims is in order. Amended independent claim 1 specifies an apparatus consisting essentially of a cylinder having opposed ends, a piston disposed for reciprocating movement between the opposed ends of the cylinder, drive means connected to the piston for providing the reciprocating movement of the piston, sensor means in communication with said cylinder for sensing any contact of said piston and said opposed ends, and generating a contact signal representing said contact, control means interconnecting said sensor means and said drive means, the control means adapted to receive said contact signal and generate a control signal to said drive means to adjust reciprocating movement of the position without determining the location of the piston, wherein the sensor means, drive means and controller are connected in series. Amended independent claim 8 specifies a system for

controlling a reciprocating apparatus having a cylinder, a piston adapted for reciprocating movement in the cylinder, and a driver for moving the piston, the system consisting essentially of sensor means mounted to said cylinder for generating a first signal representing contact between the piston and the cylinder, and control means interconnecting said sensor means and the driver, the control means responsive to the first signal to generate a second signal to the driver to control movement of the driver and the piston without detecting the location of the piston, wherein the sensor means, drive means and control means are connected in series.

In contrast Yang discloses an apparatus and system which includes a driving unit connected in parallel with stroke computation unit 800. There is no teaching or suggestion in Yang of an apparatus consisting essentially of driver means connected in series with sensor means and control means which interconnects the sensor means and driver as in the claimed invention.

Yang controls movement of the piston by voltage control which drives the compressor in accordance with the stroke determined by the microcomputer based on a control destination stroke (col. 3, lines 45-62). A stroke computation unit would materially alter the nature of the claimed invention in which the apparatus or system consists essentially of the sensor means, drive means and control means and which does not determine the location of the piston.. The term "consisting essentially of" precludes the presence of any other material which materially affects the basic and novel characteristics of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52 (C.C.P.A. 1976). Accordingly, Yang et al. is not applicable to the claimed invention.

Claims 1-8 have also been rejected under 35 U.S.C. §103 as being unpatentable over Matsumara et al. JP 11-324911 in view of Yang. Matsumara discloses the use of a displacement sensor. In contrast, in the claimed invention the location of the piston is not determined. Accordingly, Matsumara alone or in combination with Yang, fails to render the claimed invention obvious.

In view of the foregoing claims 1-8, all the pending claims, are in condition for allowance.

Prompt and favorable action is respectfully requested.

Respectfully submitted,



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